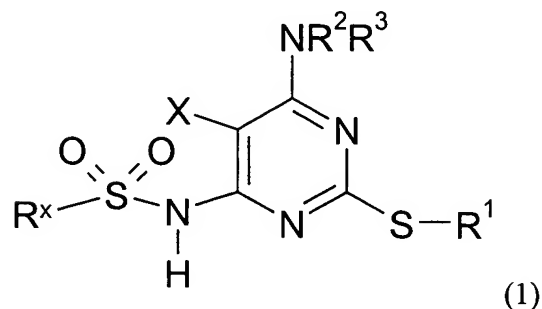


Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A compound of formula (1), pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof:



wherein  $\text{R}^1$  is a group selected from  $\text{C}_{3-7}$ carbocyclyl,  $\text{C}_{1-8}$ alkyl,  $\text{C}_{2-6}$ alkenyl and  $\text{C}_{2-6}$ alkynyl;  
wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from fluoro, nitrile,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ , phenyl or heteroaryl; wherein phenyl and heteroaryl are optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ ,  $\text{C}_{1-6}$ alkyl and trifluoromethyl;

wherein  $\text{R}^2$  is  $\text{C}_{3-7}$ carbocyclyl, optionally substituted by 1, 2 or 3 substituents independently selected from:

- (a) fluoro,  $-OR^4$ ,  $-NR^5R^6$ ,  $-CONR^5R^6$ ,  $-COOR^7$ ,  $-NR^8COR^9$ ,  $-SR^{10}$ ,  $-SO_2R^{10}$ ,  $-SO_2NR^5R^6$ ,  $-NR^8SO_2R^9$ ;
- (b) a 3-8 membered ring optionally containing 1, 2 or 3 atoms selected from O, S,  $-NR^8$  and whereby the ring is optionally substituted by  $C_{1-3}$ alkyl or fluoro; or
- (c) phenyl or heteroaryl, each of which is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-OR^4$ ,  $-NR^5R^6$ ,  $-CONR^5R^6$ ,  $-NR^8COR^9$ ,  $-SO_2NR^5R^6$ ,  $-NR^8SO_2R^9$ ,  $C_{1-6}$ alkyl and trifluoromethyl;

or  $R^2$  is a group selected from  $C_{1-8}$ alkyl,  $C_{2-6}$ alkenyl or  $C_{2-6}$ alkynyl wherein the group is substituted by 1, 2 or 3 substituents independently selected from hydroxy, amino,  $C_{1-6}$ alkoxy,  $C_{1-6}$ alkylamino, di( $C_{1-6}$ alkyl)amino,  $N$ -( $C_{1-6}$ alkyl)- $N$ -(phenyl)amino,  $N$ - $C_{1-6}$ alkylcarbamoyl,  $N,N$ -di( $C_{1-6}$ alkyl)carbamoyl,  $N$ -( $C_{1-6}$ alkyl)- $N$ -(phenyl)carbamoyl, carboxy, phenoxycarbonyl,  $-NR^8COR^9$ ,  $-SO_2R^{10}$ ,  $-SO_2NR^5R^6$  and  $-NR^8SO_2R^9$ ;

wherein  $R^3$  is hydrogen or independently  $R^2$ ;

$R^4$  is hydrogen or a group selected from  $C_{1-6}$ alkyl and phenyl, wherein the group is optionally substituted by 1 or 2 substituents independently selected from halo, phenyl,  $-OR^{11}$  and  $-NR^{12}R^{13}$ ;

$R^5$  and  $R^6$  are independently hydrogen or a group selected from  $C_{1-6}$ alkyl and phenyl wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, phenyl,  $-OR^{14}$ ,  $-NR^{15}R^{16}$ ,  $-COOR^{14}$ ,  $-CONR^{15}R^{16}$ ,  $-NR^{15}COR^{16}$ ,  $-SO_2R^{10}$ ,  $-SONR^{15}R^{16}$  and  $NR^{15}SO_2R^{16}$  or

$R^5$  and  $R^6$  together with the nitrogen atom to which they are attached form a 4- to 7-membered saturated heterocyclic ring system optionally containing a further heteroatom selected from oxygen and nitrogen atoms, which ring is optionally substituted by 1, 2 or 3 substituents independently selected from phenyl,  $-OR^{14}$ ,  $-COOR^{14}$ ,  $-NR^{15}R^{16}$ ,  $-CONR^{15}R^{16}$ ,  $-NR^{15}COR^{16}$ , -

$\text{SO}_2\text{R}^{10}$ ,  $-\text{SONR}^{15}\text{R}^{16}$ ,  $\text{NR}^{15}\text{SO}_2\text{R}^{16}$  or  $\text{C}_{1-6}$ alkyl (optionally substituted by 1 or 2 substituents independently selected from halo,  $-\text{NR}^{15}\text{R}^{16}$  and  $-\text{OR}^{17}$  groups);

$\text{R}^{10}$  is hydrogen or a group selected from  $\text{C}_{1-6}$ alkyl or phenyl, wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, phenyl,  $-\text{OR}^{17}$  and  $-\text{NR}^{15}\text{R}^{16}$ ; and

each of  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$ ,  $\text{R}^{11}$ ,  $\text{R}^{12}$ ,  $\text{R}^{13}$ ,  $\text{R}^{14}$ ,  $\text{R}^{15}$ ,  $\text{R}^{16}$ ,  $\text{R}^{17}$  is independently hydrogen,  $\text{C}_{1-6}$ alkyl or phenyl;

X is hydrogen, halo, cyano, nitro, hydroxy,  $\text{C}_{1-6}$ alkoxy (optionally substituted by 1 or 2 substituents selected from halo,  $-\text{OR}^{11}$  and  $-\text{NR}^{12}\text{R}^{13}$ ),  $-\text{NR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ , thio,  $\text{C}_{1-6}$ alkylthio (optionally substituted by 1 or 2 substituents selected from halo,  $-\text{OR}^{17}$ ,  $-\text{NR}^{15}\text{R}^{16}$ ),  $-\text{SO}_2\text{R}^{10}$  or a group selected from  $\text{C}_{3-7}$ carbocyclyl,  $\text{C}_{1-8}$ alkyl,  $\text{C}_{2-6}$ alkenyl or  $\text{C}_{2-6}$ alkynyl, wherein the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$  and  $-\text{NR}^8\text{SO}_2\text{R}^9$ ;

$\text{R}^x$  is trifluoromethyl,  $-\text{NR}^5\text{R}^6$ , phenyl, naphthyl, monocyclic or bicyclic heteroaryl wherein a heteroring may be partially or fully saturated and one or more ring carbon atoms may form a carbonyl group, and wherein each phenyl or heteroaryl group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ ,  $\text{C}_{1-6}$ alkyl or trifluoromethyl; or  $\text{R}^x$  is a group selected from  $\text{C}_{3-7}$ carbocyclyl,  $\text{C}_{1-8}$ alkyl,  $\text{C}_{2-6}$ alkenyl and  $\text{C}_{2-6}$ alkynyl whereby the group is optionally substituted by 1, 2 or 3 substituents independently selected from halo,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ , phenyl or heteroaryl; and wherein each phenyl or heteroaryl group is optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro,  $-\text{OR}^4$ ,  $-\text{NR}^5\text{R}^6$ ,  $-\text{CONR}^5\text{R}^6$ ,  $-\text{COR}^7$ ,  $-\text{COOR}^7$ ,  $-\text{NR}^8\text{COR}^9$ ,  $-\text{SR}^{10}$ ,  $-\text{SO}_2\text{R}^{10}$ ,  $-\text{SO}_2\text{NR}^5\text{R}^6$ ,  $-\text{NR}^8\text{SO}_2\text{R}^9$ ,  $\text{C}_{1-6}$ alkyl or trifluoromethyl;

or R<sup>x</sup> and X together form a 4 to 8-membered sulfonamide ring optionally substituted by 1, 2 or 3 substituents independently selected from halo, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -COOR<sup>7</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SR<sup>10</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>, phenyl or heteroaryl; wherein phenyl and heteroaryl are optionally substituted by 1, 2 or 3 substituents independently selected from halo, cyano, nitro, -OR<sup>4</sup>, -NR<sup>5</sup>R<sup>6</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -COOR<sup>7</sup>, -NR<sup>8</sup>COR<sup>9</sup>, -SR<sup>10</sup>, -SO<sub>2</sub>R<sup>10</sup>, -SO<sub>2</sub>NR<sup>5</sup>R<sup>6</sup>, -NR<sup>8</sup>SO<sub>2</sub>R<sup>9</sup>, C<sub>1-6</sub>alkyl and trifluoromethyl.

2. (Original) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein R<sup>2</sup> is C<sub>1-8</sub>alkyl optionally substituted by 1 or 2 hydroxy substituents.

3. (Original) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein R<sup>1</sup> is benzyl optionally substituted by 1, 2 or 3 substituents independently selected from fluoro, chloro, bromo, methoxy, methyl and trifluoromethyl.

4. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein R<sup>3</sup> is hydrogen.

5. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein X is hydrogen.

6. (Currently amended) A compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to claim 1 wherein R<sup>x</sup> is methyl, 1-methylimidazolyl, 1,2-dimethylimidazolyl, *N,N*-dimethylamino, azetidiny, pyrrolidinyl, morpholinyl and piperidinyl.

7. (Original) A compound selected from the group consisting of:

*N*-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)methanesulfonamide

*N*-[2-[(3-Chloro-2-fluorobenzyl)thio]-6-[(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-4-morpholinesulfonamide

*N*-[2-[[3-Chloro-2-fluorophenyl)methyl]thio]-6-[(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-1,2-dimethyl-1*H*-imidazole-4-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)piperidine-1-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)pyrrolidine-1-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)azetidine-1-sulfonamide

*N*-{6-{[(1*R*)-2-Hydroxy-1-methylethyl]amino}-2-[(2,3,4-trifluorobenzyl)thio]-pyrimidin-4-yl}morpholine-4-sulfonamide

*N*-(2-[(2,3-Difluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}pyrimidin-4-yl)morpholine-4-sulfonamide

*N*-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)azetidine-1-sulfonamide

*N*-{6-{[(1*R*)-2-Hydroxy-1-methylethyl]amino}-2-[(2,3,4-trifluorobenzyl)thio]-pyrimidin-4-yl}azetidine-1-sulfonamide

*N*'-(2-[(3-Chloro-2-fluorobenzyl)thio]-6-{[(1*R*)-2-hydroxy-1-methylethyl]amino}-pyrimidin-4-yl)-*N,N*-dimethylsulfamide

*N*-[2-[[3-Chloro-2-fluorophenyl)methyl]thio]-6-[(*R*)-(2-hydroxy-1-methylethyl)amino]-4-pyrimidinyl]-1-methyl-1*H*-imidazole-4-sulfonamide;

and a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof.

8. (Cancelled)

9. (Currently amended) A method for the treatment of asthma, allergic rhinitis, COPD, inflammatory bowel disease, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis comprising administering a ~~A~~ compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to ~~any one of claims 1 to 7~~ claim 1 ~~for use as a medicament for the treatment of asthma, allergic rhinitis, COPD, inflammatory bowel disease, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.~~

10. (Currently amended) A method for the treatment of cancer comprising administering a ~~A~~ compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to ~~any one of claims 1 to 7~~ claim 1, ~~for use as a medicament for the treatment of cancer.~~

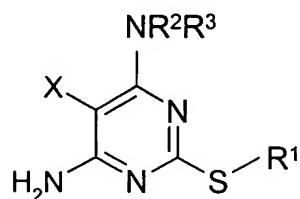
11. (Currently amended) A method for the treatment of a human disease or condition in which modulation of chemokine receptor activity is beneficial comprising administering ~~The use~~ of a compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, according to ~~any one of claims 1 to 7~~ claim 1 ~~in the manufacture of a medicament for the treatment of human diseases or conditions in which modulation of chemokine receptor activity is beneficial.~~

12-13. (Cancelled)

14. (Currently amended) A pharmaceutical composition comprising a compound, pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof according to ~~any one of claims 1 to 7~~ claim 1; and a pharmaceutically-acceptable diluent or carrier.

15. (Currently amended) A process for the preparation of a compound according to claim 1 comprising the steps of:

a) treating a compound of formula (2):

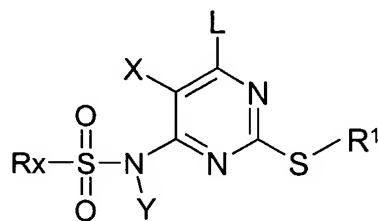


(2)

wherein  $R^1$ ,  $R^2$ ,  $R^3$  and X are as defined in claim 1, with sulfonyl chlorides ( $R^xSO_2Cl$  where  $R^x$  is as defined in claim 1;

or

b) treating a compound of formula (7):



(7)

wherein  $R^1$ ,  $R^x$  and X are as defined in ~~formula (1)~~ claim 1, L is a halogen and Y is either hydrogen or a protecting group with nucleophilic amines of the type  $NR^2R^3$  as defined in ~~formula (1)~~ claim 1 in the presence or absence of a suitable base and solvent;

or

c) treating a compound of formula (8):



(8)

wherein  $R^1$ ,  $R^x$  and X are as defined in claim 1 formula (1) and L is halogen, with sulfonamides of formula  $R^xSO_2NH_2$  where  $R^x$  is as defined in claim 1 formula (1) except  $NR^5R^6$  in the presence of a suitable base and solvent.

and

independently for each of process variants a), b) or c), optionally thereafter (i), (ii), (iii), (iv) or (v) in any order:

- i) removing any protecting groups;
- ii) converting the compound of formula (1) into a further compound of formula (1)
- iii) forming a salt
- iv) forming a prodrug
- v) forming an *in vivo* hydrolysable ester.

16. (Currently amended) A combination therapy which comprises administering a compound of formula (1) as defined in claim 1 or a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, or a pharmaceutical composition or formulation comprising a compound of formula (1) as defined in claim 1, concurrently or sequentially with other therapy and/or another pharmaceutical agent.

17. (Currently amended) A combination therapy as claimed in claim 16 ~~for the treatment wherein the amount of the compound in the composition is effective for treating of~~ asthma, allergic rhinitis, COPD, inflammatory bowel disease, irritable bowel syndrome, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.

18. (Currently amended) A combination therapy as claimed in claim 16 ~~for the treatment wherein the amount of the compound in the composition is effective for treating of~~ cancer.



19. (Currently amended) A pharmaceutical composition which comprises a compound of formula (1) as defined in claim 1 or a pharmaceutically acceptable salt, solvate or *in vivo* hydrolysable ester thereof, in conjunction with another pharmaceutical agent.

20. (Currently amended) A pharmaceutical composition as claimed in claim 19 ~~for the treatment of~~ wherein the amount of the compound in the composition is effective for treating asthma, allergic rhinitis, COPD, inflammatory bowel disease, irritable bowel syndrome, osteoarthritis, osteoporosis, rheumatoid arthritis, or psoriasis.

21. (Currently amended) A pharmaceutical composition as claimed in claim 19 ~~for the treatment of~~ wherein the amount of the compound in the composition is effective for treating cancer.